

WHAT IS CLAIMED IS:

1. An explicit routing method in a label switching system,
comprising:

5 a step of logically dividing a label switching router (LSR)
into a plurality of LSRs each having a label switching function;
and

a step of specifying, when setting a label switched path
on the basis of an explicit route specified, a port or a port
group of an egress node.

10

2. An explicit routing method in a label switching system,
comprising:

15 a step of flooding, as topology data, a set of an
intra-system port and an IP address allocated to the port, or
a set of a port group among a plurality of groups into which
the ports are divided, and an IP address allocated to the port
group; and

a step of managing the topology data flooded from other
system and, when setting a label switched path on the basis of
20 an explicit route specified, explicitly specifying a port or
a port group of an egress node, and a port or a port group of
a relay node on the basis of the received topology data.

25 3. An explicit routing method in a label switching system,
comprising:

a step of flooding, as topology data, a set of an
intra-system port and an IP address allocated to the port, or

00596674.10500

a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group.

5 4. An explicit routing method in a label switching system, comprising:

10 a step of flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

 5. An explicit routing method in a label switching system, comprising:

15 a step of explicitly specifying, when setting a label switched path on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node.

20 6. An explicit routing method in a label switching system according to claim 5, further comprising:

 a step of specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in final ER-HOP-TLV in ER-TLVs
25 in Label Request Message of CR-LDP; and

 a step of specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the

port group of the relay node in intermediate ER-HOP-TLV in ER-TLVs in Label Request Message of the CR-LDP.

7. An explicit routing method in a label switching system according to claim 5, further comprising:

a step of specifying the port or the port group of the egress node and the port or the port group of the relay node by adding an intra-system port number or an intra-system port group number in ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP.

8. An explicit routing method in a label switching system according to claim 5, further comprising:

a step of explicating a port through which data should pass per system and specifying a port or a port group of the egress node by use of resource class TLV with ER-TLV in Label Request Message of CR-LDP being used as ER-HOP-TLV.

9. An explicit routing method in a label switching system according to claim 5, further comprising:

a step of specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in final Subject-object in Explicit Route Objects in a path message of RSVP protocol extended for setting a label switched path in MPLS protocol; and

a step of specifying a port or port group of the relay node by setting an IP address corresponding to the port or the

091696574-103500

port group of the relay node in intermediate Subject-object in Explicit Route Objects in the path message of the RSVP protocol.

10. An explicit routing method in a label switching system
5 according to claim 5, further comprising:

a step of specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an intra-system port number or an intra-system port group number in Subject-object in Explicit Route Objects in the path message
10 of RSVP protocol extended for setting the label switched path in MPLS protocol.

11. An explicit routing method in a label switching system, comprising:

15 a step of specifying an MPLS explicit route by adding, to an IP-over-MPLS (IP/MPLS) forwarding function of one specified egress-and-ingress port group, a communication function with the IP/MPLS forwarding function of an intra-system other port group, and a forwarding function to the intra-system other port
20 group.

12. A packet router in a label switching system, comprising:

a logical router configuring module for logically dividing
25 a label switching router (LSR) into a plurality of LSRs each having a label switching function; and

a module for specifying, when setting a label switched

00505074996960

path on the basis of an explicit route specified, a port or a port group of an egress node.

13. A packet router in a label switching system,
5 comprising:

a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group; and

10 a module for managing the topology data flooded from other system and, when setting a label switched path on the basis of an explicit route specified, explicitly specifying a port or a port group of an egress node, and a port or a port group of
15 a relay node on the basis of the received topology data.

14. A packet router in a label switching system,
comprising:

20 a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group.

25 15. A packet router in a label switching system,
comprising:

a module for flooding, as topology data, a set of an

00520T-1295500

intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

5

16. A packet router in a label switching system, comprising:

a module for explicitly specifying, when setting a label switched path on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node.

10

17. A packet router in a label switching system according to claim 16, further comprising:

15

a module for specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in final ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP; and

a module for specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in intermediate ER-HOP-TLV in ER-TLVs in Label Request Message of the CR-LDP.

20

18. A packet router in a label switching system according to claim 16, further comprising:

25

a module for specifying the port or the port group of the egress node and the port or the port group of the relay node

00505074.1299660

intra-system port number or an intra-system port group number in Subject-object in Explicit Route Objects in the path message of RSVP protocol extended for setting the label switched path in MPLS protocol.

5

22. A packet router in a label switching system, comprising:

a module for specifying an MPLS explicit route by adding, to an IP/MPLS forwarding function of one specified egress-and-ingress port group, a communication function with the IP-over-MPLS (IP/MPLS) forwarding function of an intra-system other port group, and a forwarding function to the intra-system other port group.

10

005207" 102500
0969674
0969690

by adding an intra-system port number or an intra-system port group number in ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP.

5 19. A packet router in a label switching system according to claim 16, further comprising:

 a module for explicating a port through which data should pass per system and specifying a port or a port group of the egress node by use of resource class TLV with ER-TLV in Label

10 Request Message of CR-LDP being used as ER-HOP-TLV.

 ..
 20. A packet router in a label switching system according to claim 16, further comprising:

 a module for specifying a port or a port group of the egress
15 node by setting an IP address corresponding to the port or the port group of the egress node in final Subject-object in Explicit Route Objects in a path message of RSVP protocol extended for setting a label switched path in MPLS protocol; and

 a module for specifying a port or port group of the relay
20 node by setting an IP address corresponding to the port or the port group of the relay node in intermediate Subject-object in Explicit Route Objects in the path message of the RSVP protocol.

 21. A packet router in a label switching system according
25 to claim 16, further comprising:

 a module for specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an

00520T-12956960